



# Advisory Circular

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**Subject:** Guidance on the Extraction of Oil and Gas on Federally Obligated Airports

**Date:** Draft

**AC No:** 150/5100-XX

**Initiated By:** APP-400

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## 1 **Purpose.**

- This Advisory Circular (AC) discusses oil and gas development on federally obligated airport land, including any drilling that penetrates the property (surface and subsurface). It describes existing FAA policy, guidance, standards, and obligations, as well as other applicable laws and regulations, for airport sponsors to apply to proposed on-airport oil and gas development activities.
- An airport sponsor may propose to develop its oil and gas resources and/or convey its mineral rights pursuant to an oil and gas lease for extraction from its obligated land. Oil and gas leases that only provide for the sale of the airport mineral rights and do not require access or use of airport surface land for well sites or supporting infrastructure, or any other “on-airport” construction or changes to the airport surface for the production of oil and gas may not require any amendments, revisions, or modifications to the FAA-approved Airport Layout Plan (ALP). Therefore, the FAA requirements related to ALP approval or on-airport construction and operation, as described in this AC, may not apply to these “non-surface disturbance / non-surface occupancy” oil and gas leases. However, the FAA compliance and airspace notification requirements may be applicable, as described in Chapter 2. FAA revenue use requirements are applicable.
- This AC does not discuss on-airport extraction of other resources, such as water wells or coal, ore, sand and gravel or other solid minerals. However, certain grant assurances, lease provisions, and planning, environmental, and safety considerations discussed in this AC are applicable, and any on-airport construction or land use must be subordinate to and compatible with airport use of the airport land.

## 2 **Application.**

This AC applies to airport sponsors with federally obligated airport land that are considering on-airport oil and gas production, and in particular involving hydraulic

fracturing. See appendix A for a brief overview of hydraulic fracturing as used in shale oil and gas production.

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**CHAPTER 1. INTRODUCTION**2 1.1 **Applicability.**

3 This AC applies to airport sponsors with federally obligated airport land that are  
4 considering oil and gas lease for sale of mineral extraction rights and allowable access,  
5 use, or occupancy of airport surface land. One source for determining if an airport is  
6 federally obligated is FAA Order 5190.2, List of Public Airports Affected by  
7 Agreements with the Federal Government. The Order contains a listing of publicly and  
8 privately owned public use airports affected by agreements with the federal government  
9 and handled by the FAA. In addition, line 25 of Form 5010-3, The Airport Master  
10 Record (Existing Public Use Airports), indicates whether the airport is obligated. Form  
11 5010-3 is available online at <http://www.gcr1.com/5010web/>.

12 1.2 **Related FAA Guidance and Requirements.**

13 This AC does not create new requirements, but is a compilation of existing FAA  
14 guidance and requirements applicable on airport construction for oil and gas  
15 development on airport land, including the following.

- 16 • FAA AC 70/7460-1K, Obstruction Marking and Lighting
- 17 • FAA AC 150/5070-6 Airport Master Plans
- 18 • FAA AC 150/5100-17, Land Acquisition and Relocation Assistance for Airport  
19 Improvement Program Assisted Projects
- 20 • FAA AC 150/5200-33, Hazardous Wildlife Attractants On or Near Airports
- 21 • FAA AC 150/5370-2, Operational Safety on Airports During Construction
- 22 • FAA Order 1050.1, Environmental Impacts: Policies and Procedures
- 23 • FAA Order 5050.4, National Environmental Policy Act (NEPA) Implementing  
24 Instructions for Airport Projects
- 25 • FAA Order 5190.6, FAA Airport Compliance Manual
- 26 • FAA Order 5200.11, FAA Airports (ARP) Safety Management System (SMS)
- 27 • FAA Order JO 7400.2, Procedures for Handling Airspace Matters
- 28 • FAA's Policy and Procedures Concerning the Use of Airport Revenue (Revenue  
29 Use Policy) (64 FR 7696 February 16, 1999)
- 30 • FAA AC 150/5200-36A, Qualifications for Wildlife Biologist Conducting Wildlife  
31 Hazard Assessment and Training Curriculums for Airport Personnel Involved in  
32 Controlling Wildlife Hazards on Airports

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34 1.3 **Organization of this Advisory Circular.**

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- 36 • Chapter 1, Introduction.
  - 37 • Chapter 2, Sponsor Oil and Gas Development, compiles the airport sponsor and  
38 FAA staff with existing FAA requirements and provides recommendations on what  
39 factors to consider when evaluating and reviewing on-airport oil and gas  
40 development plans and proposals. This chapter identifies the airport sponsor grant  
41 assurances that apply to federally obligated airports. This chapter provides a step-  
42 by-step process an airport sponsor can follow for when drafting and negotiating an  
43 oil and gas lease for oil and gas development. The step-by-step process identifies  
44 existing sponsor submittal requirements applicable to each of the phases of oil and  
45 gas development on obligated airport land (see Figure 2-1 for a process overview).
  - 46 • Chapter 3, FAA Review Process, provides an overview of the requirements for the  
47 FAA review of sponsor submittals. This chapter identifies existing compliance,  
48 safety, construction, planning and environmental review requirements applicable to  
49 oil and gas development on federally obligated airport property.
  - 50 • Appendix A, Unconventional Oil and Gas Production, provides a brief overview of  
51 oil and gas production with a focus on recent technological changes that have  
52 advanced unconventional methods of oil and gas extraction, primarily through the  
53 practice of hydraulic fracturing and horizontal drilling to tap shale oil and gas  
54 reserves in the United States.
  - 55 • Appendix B, Sample Oil and Gas Lease Provisions for On-Airport Development,  
56 provides an overview of sample oil and gas lease provisions needed to ensure  
57 compliance with grant assurances and to protect the airport use of federally  
58 obligated property.
  - 59 • Appendix C, References, provides additional resources considered in the  
60 preparation of this AC.

61                   **CHAPTER 2. SPONSOR OIL AND GAS DEVELOPMENT**

62    2.1       **Protection of Obligated Airport Land.**

63    2.1.1     Oil and gas development of airport land include any drilling that penetrates the property  
64             (surface and subsurface) of federally obligated airports. Whether there is on-airport  
65             drilling operations and related construction or the lease is limited to extraction from  
66             outside of airport property, the oil and gas lease and production must comply with the  
67             airport sponsor's federal aid obligations and restrictions placed on airport land through a  
68             surplus property deed.

69    2.1.2     When acquiring land or using land for Airport Improvement Program (AIP) assisted  
70             projects, the airport sponsor is required to certify that it holds good title for airport  
71             development and operations. To meet this requirement airport sponsors will typically  
72             hold fee simple title (all surface and subsurface mineral rights) to federally obligated  
73             airport land. Title 49 U.S.C. Section 47106(b)(1) states that no federal grant application  
74             for airport development may be approved by the Secretary until the Secretary of  
75             Transportation is satisfied that the sponsor, a public agency, or the United States  
76             Government holds good title to the areas of the airport used or intended to be used for  
77             the landing, taking off, or surface maneuvering of aircraft, or that good title will be  
78             acquired. The airport sponsor must acquire and maintain good title to the obligated  
79             airport property (lands included in the Airport Exhibit A /Airport Property Map).

80    2.1.3     In those cases where the airport sponsor did not acquire the mineral estate, or where  
81             acquired land was subject to an existing mineral lease, the sponsor must ensure that the  
82             mineral owner's use of airport land is subordinated to the airport use of the surface land.  
83             Under current requirements (see FAA AC 150/5100-17, Chapter 8), the FAA may  
84             accept a title certification in which the airport sponsor shows that the mineral estate is  
85             adequately subordinated and the cost to purchase or extinguish the mineral rights is not  
86             a necessary expense.

87    2.1.4     An airport sponsor may also propose to convey its owned mineral rights and permit the  
88             development of oil or gas pursuant to an oil and gas lease under the condition that the  
89             lease will not encumber its good title for airport use. However, standard industry oil  
90             and gas leases provide the driller or developer the right for extensive access to and use  
91             of the surface land. Because it permits unrestricted access, a standard oil and gas lease  
92             that may be offered by an oil and gas company for airport oil and gas development  
93             likely would not be acceptable, as it may violate the airport sponsor's federal  
94             obligations. An acceptable airport oil and gas lease must restrict airport access and well  
95             site placement to protect airport operations and ensure compliance with the airport's  
96             federal aid obligations. A change in the FAA-approved airport land use requires an  
97             airport sponsor to submit a proposed amendment, revision, or modification of the  
98             Airport Layout Plan (ALP) for FAA approval. Certain levels of FAA approval of an  
99             ALP change require environmental evaluation under the National Environmental Policy  
100            Act (NEPA).

- 101 2.1.5 Airport sponsors must comply with their federal aid obligations and the restrictions  
102 placed on the use of airport land under federal laws when considering proposals for oil  
103 and gas leases and any subsequent operations. In particular, airport sponsors must  
104 ensure the following:
- 105 • the oil and gas development does not conflict with current or planned aviation uses  
106 of the airport land;
  - 107 • wells and related infrastructure meet airport design standards, are not obstructions to  
108 air navigation as defined in 14 CFR Part 77, do not create wildlife attractants, do not  
109 create light of radio signal interference, do not impair visibility or flight conditions  
110 and are constructed to ensure safe and continuous public airport operations;
  - 111 • any on-airport allowable well development and related infrastructure (e.g. roads,  
112 fencing) must be shown on the approved ALP;
  - 113 • the well installation, development, and use conform to applicable environmental  
114 standards and; as applicable, recommended industry best management practices  
115 described in Chapter 3; and
  - 116 • the revenue generated from leases is collected and spent in accordance with the  
117 FAA’s Revenue Use Policy and in compliance with grant assurances 24 and 25, and  
118 applicable law. An acceptable lease must provide the airport fair market value for  
119 the conveyed mineral rights.

120 2.2 **On-Airport Oil and Gas Development Requirements.**

121 2.2.1 As is the case for any proposed on-airport development or use of obligated airport land,  
122 construction of well sites and extraction of oil and gas on obligated airport land is  
123 subject to the FAA review and approvals. Locations critical for airport use are not  
124 available for oil and gas development, and the oil and gas lease or production agreement  
125 must be legally subordinated to the airport sponsor’s ( and owner’s) federal grant  
126 assurances (obligations) and compatible with the public airport use of airport land.

127 2.2.2 **BEFORE** the oil and gas developer may occupy, construct, or operate on airport land,  
128 the sponsor shall provide FAA adequate submittal and request to revise or modify the  
129 approved airport layout plan (ALP) for the proposed development in compliance to  
130 FAA requirements and standards. Failure to provide required submittals to secure  
131 compliance with applicable FAA standards and requirements referenced may, at a  
132 minimum, delay development.

133 2.2.3 The following describes a step-by-step process that an airport sponsor should use to  
134 assure compliance with FAA requirements and standards when drafting and negotiating  
135 an oil and gas lease or production agreement (see Figure 2-1 for an overview of the  
136 recommended process). All the steps below apply where the proposed oil and gas lease  
137 allows well site or related infrastructure (roads, pipelines, etc.) to be constructed and  
138 operated on airport surface land. Oil and gas leases that only convey extraction rights to  
139 underlying oil and gas, but do not allow any on-airport construction (i.e., no on-airport  
140 well sites or infrastructure allowed on airport), do not involve Step 2, Development

141 Planning, or Step 6, Production Planning, described below. The other development  
142 steps and requirements listed below apply to all obligated airport oil and gas  
143 development and production proposals. Sponsors are encouraged to coordinate with the  
144 local FAA Airports District or Regional offices to ensure the development of acceptable  
145 on-airport oil and gas projects.

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Figure 2-1. On-Airport Oil and Gas Development Process (DRAFT)



148 2.2.4 Step 1 – Identify Federal, State, and Local Laws and Requirements for Airport Oil and  
149 Gas Development.

150 Hydraulic fracturing is largely regulated at the state and local levels. In response to the  
151 recent increase of shale oil and gas production throughout the United States, however,  
152 all levels of government are studying aspects of hydraulic fracturing and have proposed  
153 or are considering new legislation and regulations. This section summarizes the range  
154 of current laws, regulations, and policies that apply to on-airport oil and gas  
155 development, but is not necessarily exhaustive. Given the dynamic nature of the  
156 legislative and regulatory landscape concerning hydraulic fracturing, the current legal  
157 environment should be carefully examined. Close coordination with FAA Airports staff  
158 is particularly important.

159 2.2.4.1 **Federal Laws.**

160 2.2.4.1.1 Oil and gas drilling and production activities on airport property are treated  
161 the same as other non-aviation related airport activities, and are subject to  
162 all applicable federal laws and regulations. Airport sponsors are required to  
163 comply with airport design and construction standards, in particular those  
164 that address storm water management and spill prevention requirements. In  
165 addition, airport sponsors must ensure compliance with operational safety  
166 and design criteria for airport operations.

167 2.2.4.1.2 Airport sponsors seeking to lease mineral rights for oil and gas production  
168 must incorporate specific lease provisions to restrict surface use and  
169 development and must ensure that oil and gas developers are held to  
170 applicable airport design, safety and construction standards when  
171 conducting activities on airport. For more details on these and other federal  
172 requirements for mineral leases see Section 2.2.3.1 below.

173 2.2.4.1.3 FAA approval of proposed amendments, revisions, or modifications to  
174 ALPs as a result of proposed oil and gas development activities would be  
175 considered major federal actions subject to NEPA review.

176 2.2.4.1.4 Although some other federal environmental laws cover certain aspects of oil  
177 and gas production activities, there are many statutory exemptions. For  
178 example, the Clean Water Act (CWA) (33 U.S.C. §§ 1251 to 1387) requires  
179 the treatment of flow back water that returns to the surface from hydraulic  
180 fracturing, if such water would violate water quality standards. Oil and gas  
181 production and well site operations, however, are exempted from other parts  
182 of the CWA that regulate storm water discharge. The Clean Air Act (42  
183 U.S.C. §§ 7401 to 7671q) contains an exemption for aggregation of  
184 emissions from oil and gas exploration and production operations. Further,  
185 hydraulic fracturing was specifically exempted from the Safe Drinking  
186 Water Act (42 U.S.C. §§ 300f to 300j-26) pursuant to the Energy Policy Act  
187 of 2005 (Pub.L. 109-58), unless the fracturing fluids contain diesel fuel.

- 188           2.2.4.2       **State and Local Laws.**  
 189                   State law controls the permitting of oil and gas exploration and production,  
 190                   while local laws and regulations typically control land use, zoning,  
 191                   environmental for site development and set back requirements. Airport  
 192                   sponsors should identify applicable state and local laws, ordinances, and  
 193                   regulations concerning oil and gas permitting, development and operations  
 194                   as early in the process as possible.
- 195           2.2.4.3       **Airport Federal Financial Assistance Obligations.**
- 196           2.2.4.3.1     Title 49 U.S.C. § 47101, et seq., provides for Federal airport financial  
 197                   assistance for the development of public-use airports under the Airport  
 198                   Improvement Program (AIP) established by the Airport and Airway  
 199                   Improvement Act of 1982, as amended. Title 49 U.S.C. § 47107, et seq.,  
 200                   sets forth assurances to which an airport sponsor agrees as a condition of  
 201                   receiving Federal financial assistance.
- 202           2.2.4.3.2     As a condition precedent to providing airport development assistance under  
 203                   the Airport Improvement Program, 49 U.S.C. § 47107, et seq., the Secretary  
 204                   of Transportation and, by extension, the FAA must receive certain  
 205                   assurances from the airport sponsor. Title 49 U.S.C. § 47107(a) sets forth  
 206                   the statutory sponsorship requirements to which an airport sponsor  
 207                   receiving Federal financial assistance must agree. Presently, there are 39  
 208                   airport sponsor assurances.<sup>1</sup>
- 209           2.2.4.3.3     Upon acceptance of an AIP grant, the assurances become a binding  
 210                   contractual obligation between the airport sponsor and the Federal  
 211                   Government. The assurances made by airport sponsors in AIP grant  
 212                   agreements are important factors in maintaining a viable national airport  
 213                   system.
- 214           2.2.4.3.4     An airport sponsor's federal financial assistance obligations apply whether  
 215                   they have originated under the Federal Aid to Airports Program (FAAP),  
 216                   the Airport Development Aid Program (ADAP), or under the current  
 217                   Airport Improvement Program (AIP). Additionally, an airport may be  
 218                   federally obligated by surplus and non-surplus property conveyances.
- 219           2.2.4.3.5     An airport sponsor must abide by its existing obligations at all times. The  
 220                   most common assurances at issue when examining proposed oil and gas  
 221                   extraction on federally obligated airports include:<sup>2</sup>

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<sup>1</sup> See [http://www.faa.gov/airports/aip/grant\\_assurances/media/airport\\_sponsor\\_assurances.pdf](http://www.faa.gov/airports/aip/grant_assurances/media/airport_sponsor_assurances.pdf)

<sup>2</sup> Grant Assurances are described in FAA Order 5100.38, Airport Improvement Program Handbook and FAA Order 5190.6, The Airport Compliance Handbook.

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1. **Good Title (#4) 49 U.S.C. § 47106(b)(1).**
    - a. This grant assurance requires a sponsor to hold good title to the airport (landing area of the airport or site thereof) satisfactory to the FAA or to give satisfactory assurance to the FAA that good title will be acquired. The sponsor must maintain adequate right, title and interest to airport land for the use, maintenance and development of airport property in compliance to FAA requirements. The airport sponsor is required to certify that notwithstanding the mineral rights conveyed under oil and gas lease, the airport sponsor retains good title to airport land mineral.
    - b. The certification is required in order to comply with the sponsor's Preserving Rights and Power (grant assurance 5 obligations described below) that:

“...the sponsor may not sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in the [obligated] property shown on Exhibit A [Property Map] for the duration of the terms, conditions, and assurances in this grant agreement without approval by the Secretary, nor may the sponsor permit any action which will operate to deprive it of any of the rights and powers necessary to perform any or all of the terms, conditions, and assurances in the grant agreement without the written approval of the Secretary, and will act promptly to acquire, extinguish or modify any outstanding rights or claims of right of others which would interfere with such performance by the sponsor.”
  2. **Preservation of Rights and Powers (#5) 49 U.S.C. § 47107(g).** As noted above, the sponsor must certify that the lease with the third party does not cede the sponsor’s rights and powers to maintain control over the airport. The sponsor must continually ensure that it will not cause or permit any activity or action thereon which would interfere with its use of airport land for airport purposes. This assurance will be met by the proposed oil and gas lease and gas development and operation plan adhering to FAA airspace notification and on-airport construction requirements and making it subordinate to the sponsors grant assurances.
  3. **Hazard Mitigation (#20) 49 U.S.C. § 47107 (a)(9).**
    - a. Under this assurance, the design, construction, and operation of the gas/oil development project and related improvements shall not create a hazard.
    - b. In particular the use of ponds (on and off airport) and waste water management due to hydraulic fracking of wells shall not create a hazardous wildlife attractant to the airport.
    - c. Hazardous wildlife and criteria for hazardous wildlife attractants are defined in FAA Advisory Circular (AC) 150/5200-33, Hazardous

- 265 Wildlife Attractants on or Near Airports. All design, construction,  
266 and operation of the facility and all facility components shall  
267 comply with FAA AC 150/5200-33, Hazardous Wildlife Attractants  
268 On or Near Airports.
- 269 d. FAA AC 150/5200-33 advises a 5,000 or 10,000 foot separation  
270 distance between the airports air operations area and a hazardous  
271 wildlife attractant. Additionally, it is recommended that a 5-mile  
272 separation distance be considered when the attractant could cause  
273 wildlife movement into or across the approach or departure  
274 airspace.<sup>3</sup>
- 275 e. In cases where a wildlife biologist is consulting on wildlife  
276 management and hazard elimination, the wildlife biologist must  
277 meet the qualifications identified in FAA AC 150/5200-36,  
278 Qualifications for Wildlife Biologist Conducting Wildlife Hazard  
279 Assessments and Training Curriculums for Airport Personnel  
280 Involved in Controlling Wildlife Hazards on Airports.
- 281 4. **Fee and Rental Structure (#24) 49 U.S.C. § 47107(a)(13) (See also,**  
282 **Revenue Use Policy at 64 FR 7696).** This assurance requires the oil  
283 and gas lease to secure payments to the airport for the fair market value  
284 (FMV) of the “paid-up<sup>4</sup>” lease signing bonus, oil and gas royalties, any  
285 production delay payments and rents, and the rent of any surface lands  
286 for nonaeronautical purposes (e.g., FMV rent paid for well site, roads,  
287 pipeline and utilities lines serving well sites).
- 288 5. **Airport Revenues (#25) 49 U.S.C. § 47107(b) and 47133 (see also,**  
289 **Revenue Use Policy at 64 FR 7696).** This assurance requires the  
290 sponsor to ensure the revenues generated from the extraction of  
291 minerals on the airport property will be retained for airport, airport  
292 system, and/or aviation system uses in accordance with applicable  
293 statute and the revenue use policy.<sup>5</sup>
- 294 6. **Airport Layout Plan (#29) 49 U.S.C. § 47107(a)(16).**
- 295 a. This assurance requires the sponsor to submit proposed  
296 amendments, revisions, or modifications to the ALP to FAA for

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<sup>3</sup> Note that some states have regulations for controlling wildlife and attractants at airports.

<sup>4</sup> A “paid-up” lease is a common term in oil and gas leases, in which the lump sum delay rentals for the primary lease period is paid at the commencement of the lease.

<sup>5</sup> Note that the FAA Modernization and Reform Act of 2012 (PL. 112-95, Section 813) required the FAA to develop procedures to permit certain general aviation airports to use revenue generated by mineral extraction, production, or lease subject to certain conditions. These procedures were published May 16, 2012 and the toolkit including this guidance is available on the FAA’s Airport Compliance website at [http://www.faa.gov/airports/airport\\_compliance/mineral\\_revenue/](http://www.faa.gov/airports/airport_compliance/mineral_revenue/).

297 approval, prior to altering the use of airport land designated for an  
298 aeronautical use to a nonaeronautical use or constructing above  
299 grade structures, such as surface roads. The sponsor must submit  
300 proposed amendments, revisions, or modifications to the ALP  
301 identifying location(s) of activities, buildings, and associated  
302 infrastructure that alter the surface of the airport or impact the  
303 aeronautical use of the surface property.

304 b. Approval of an ALP showing future nonaeronautical land use does  
305 not constitute FAA approval for that nonaeronautical use. The ALP  
306 is a planning document and FAA approval will be required at the  
307 time the land is to be used for a non-aeronautical purpose, such as a  
308 well site, (see Airport Compliance Handbook chapter 21, paragraph  
309 21.6(f)(5), page 21-9.) Please note when an airport sponsor wishes  
310 to change land use from aeronautical to nonaeronautical, the airport  
311 sponsor is required to comply with applicable requirements  
312 governing such changes in use. (See FAA Order 5190.6B, Section  
313 22.31, Procedures for Public Notice for a Change in Use of  
314 Aeronautical Property at page 22-22 to 22-23).

315 **7. Disposal of Airport Land (#31) 49 U.S.C. § 47107(c)(2).**

316 As described above, the FMV of mineral rights and any surface land  
317 use conveyed shall be paid the airport under an acceptable oil and gas  
318 lease. Oil and gas leases permitting the extraction of oil and gas on and  
319 from federally obligated airport property constitute sales of real  
320 property, are not an interim use of airport property, and are not  
321 temporary arrangements for the use of airport land for nonaeronautical  
322 purposes. As such, the lease must comply with grant assurance 31.

323 **2.2.5 Step 2 – Development Planning.**

324 2.2.5.1 Prior to drafting or negotiating a lease, airport sponsors should coordinate  
325 with the FAA to determine where oil and gas drilling and related activities  
326 may and may not occur on airport property. There are areas of the airport  
327 that cannot be drilled on due to height restrictions, current operations, or  
328 future airport development activities. Airport sponsors should maintain the  
329 airfield operations area, runway and taxiway safety areas and object free  
330 areas, runway protection zones, and obstacle free zones defined in AC  
331 150/5300-13 (current edition) free of oil and gas development activities to  
332 assure preservation of the Airport's rights and powers (grant assurance #5)  
333 and minimize any potential for disruption to safe and efficient aviation  
334 operations.

335 2.2.5.2 Airport sponsors should prepare a drawing that depicts areas on the airport  
336 that are available for oil and gas development and operations that would not  
337 interfere with future aviation development.

338 2.2.5.3 In addition, airport sponsors should notify the FAA Airports Regional or  
339 District Office early in the planning process to determine the need or  
340 requirements for Safety Risk Management (SRM). Safety Management  
341 System (SMS) and SRM principals apply to any oil and gas extraction  
342 proposals that could affect safe airport operations. FAA SRM procedures  
343 are described by Order 5200.11, FAA Airports (ARP) SMS. In accordance  
344 with this Order, SRM may be required prior to review and approval of any  
345 proposed amendment, revision, or modification of an ALP that includes oil  
346 and gas extraction facilities. Additionally SRM may be needed for well site  
347 construction project coordination as may be determined by FAA Air  
348 Traffic.

349 2.2.6 Step 3 – Draft Acceptable Oil and Gas Lease.

350 The airport sponsor should develop and draft its proposed oil and gas lease to  
351 incorporate the airport safety and design standards, environmental controls, and all  
352 other necessary terms and conditions necessary to adequately protect and ensure  
353 continued aeronautical use. Lease provisions must subordinate the lease and mineral  
354 rights conveyed to the sponsors existing and future grant assurances. Standard oil and  
355 gas leases in common use by oil and gas companies likely are not acceptable for airport  
356 lease situations without modifications to make them compliant with the requirements  
357 outlined in this AC.

358 2.2.6.1 **Lease Provision Requirements.**

359 2.2.6.1.1 Appendix B provides sample lease checklist and terms and conditions for an  
360 acceptable oil and gas lease to ensure compatible surface use of airport land.  
361 Airport sponsors may want to engage legal counsel to develop and negotiate  
362 oil and gas leases and proposals.

363 2.2.6.1.2 The airport sponsor must maintain adequate control over the surface use of  
364 airport land for aeronautical use at all times. As described below, the  
365 required lease terms and conditions depend on whether the oil and gas lease  
366 proposes on-airport development or only proposes the sale of the minerals  
367 without any on-airport construction or permanent development, e.g., an  
368 under-the-Fence Lease.

369 1. **Lease Allows On-Airport Development.** If on-airport development is  
370 part of a proposed oil and gas lease arrangement, the oil and gas lease  
371 must be expressly subordinated to the airport use of the obligated land.  
372 Appendix B contains sample lease terms required to restrict access and  
373 require adherence to FAA requirements for on-airport construction and  
374 non-aeronautical operations. Surface land disturbance and occupancy  
375 for development and operations requires an ALP change, which in turn  
376 requires an evaluation of environmental impacts under NEPA (see Step  
377 5 below).

378 2. **Under the Fence Only Leases (i.e., no on-airport development).** If  
379 the lease prohibits any surface development of airport land and is

380 limited to the subterranean lateral wellbores from off-airport well sites,  
381 the development process is far less complex. The airport sponsor must  
382 apply adequate engineering analysis and standards to ensure that  
383 subsurface drilling, well boring and oil and gas extraction will not cause  
384 any subsidence or adverse effects on the airport facilities or use. With  
385 an “Under-the-Fence “ oil and gas lease, required lease terms described  
386 in Appendix B may be limited, as applicable, to any proposed surface  
387 land use or disturbance. If exploration activities may occur on airport  
388 surface lands, adequate lease terms are required to restrict access and  
389 ensure no conflict with airport operations. Under-the-fence leases still  
390 require FMV payments to the airport in compliance with the Revenue  
391 Use Policy (64 FR 76956, February 16, 1999), applicable statute and  
392 off airport airspace clearance (14 CFR Part 77).

393 2.2.6.2 **Airport Sponsor Lease Submittal Requirements.**

394 FAA review of an oil and gas lease prior to entering into it can help ensure  
395 that applicable Grant Assurances will be continuously met. The following  
396 (1-4) are required to be submitted to the FAA to ensure the proposed lease  
397 conforms to FAA grant assurances.

398 1. **Airport certification of Good Title.** An oil and gas lease is a sale of  
399 the mineral rights that encumbers an airport sponsor’s title to airport  
400 land. As such, prior to solicitation of an oil and gas lease, an airport  
401 sponsor’s attorney must certify to FAA that the airport retains good title  
402 in all airport land for public use airport purposes (landing area, etc).  
403 The certification requires the airport sponsor’s attorney to review the  
404 proposed lease documents, the proposed construction of oil and gas  
405 wells and facilities, and changes to the ALP to determine whether the  
406 airport owner has the right to enforce lease restrictions and meet FAA  
407 requirements.

408 2. **Draft ALP.**

409 a. A proposed amended, revised, or modified ALP should identify the  
410 current location and elevation of any property or facilities affected  
411 by the proposed gas or oil production plan (e.g., aeronautical or  
412 non-aeronautical). The submittal must indicate how the affected  
413 property was acquired and any federal funding invested in affected  
414 property or improvements (e.g., if federally funded fencing is to be  
415 relocated or gate and access road installed). The ALP should  
416 identify any impacts to current and future planned uses and how  
417 such impacts would be accommodated and mitigated.

418 b. The ALP should show, to the extent known, the proposed location  
419 of all well sites and related above-ground structures and related  
420 access and support right of way. A separate drawing sheet  
421 depicting subsurface horizontal lines should be maintained by the  
422 lessee and the airport sponsor, but is not required to be submitted to  
423 FAA as part of the ALP drawing set.

- 424 c. Additional changes to the ALP may be required at subsequent  
425 stages of the oil and gas development process, including exploration  
426 and well-site production.
- 427 3. **Fair Market Value (FMV) Documentation.**
- 428 a. Competitive Bid / Request for Proposal. The proposed solicitation  
429 should be submitted to FAA for review. The solicitation and bid  
430 items must reflect FMV payment levels and terms for the proposed  
431 mineral resource. The lease solicitation and bid will also need to  
432 include FMV rents for any use of surface lands (e.g. well sites,  
433 roads, pipelines, other infrastructure or facilities allowable for  
434 occupancy on airport land.)
- 435 b. Negotiated leases must be shown to require FMV lease and royalty  
436 payments to the airport as well as surface land rents. Where the  
437 airport has not sought or had not received adequate competitive  
438 bids, an appraisal report and determination of the FMV lease  
439 payments and royalty rates must be submitted.
- 440 4. **Payment Terms and Revenue Use.** The oil and gas lease must  
441 provide FMV payment terms. As noted in the Interim Guidance on  
442 Mineral Extraction and Request for Data Update, dated August  
443 24,2012, the FAA Modernization and Reform Act of 2012 (PL 112-95,  
444 Section 813) requires the FAA to permit certain general aviation  
445 airports to use revenue generated by mineral leases, production, or lease  
446 for eligible transportation infrastructure projects, subject to certain  
447 conditions.<sup>6</sup>

448 2.2.7 Step 4 – Lease Solicitation and Determination of FMV.

449 2.2.7.1 Solicitations for oil and gas leases must meet all applicable federal, state  
450 and local procurement laws and requirements. Leases may be offered for  
451 competitive bid with disclosure of all lease terms and conditions required by  
452 the FAA and the airport. With adequate bid procedures and documentation,  
453 the accepted high bid may be considered to reflect the FMV of the land and  
454 appropriate share of the minerals sold. NEPA review and ALP approval  
455 may require that additional stipulations be added to a lease.

456 2.2.7.2 The airport sponsor's acceptance of a lease does not necessarily mean the  
457 FAA will approve the proposed needed ALP amendments, revisions, or  
458 modifications to permit actual use and occupancy of airport land. Oil and  
459 gas development on airport land that is not approved by FAA would be  
460 removed or modified as necessary to secure compliance with grant

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<sup>6</sup> See toolkit available at [http://www.faa.gov/airports/airport\\_compliance/mineral\\_revenue/](http://www.faa.gov/airports/airport_compliance/mineral_revenue/)

461                   assurances and applicable FAA requirements. Adequate oil and gas  
462                   appraisals may be required to support negotiated leases or where the FAA  
463                   ADO or Region determines that there is a lack of competitive bids.  
464                   Appraisal report documentation must meet American Petroleum Institute  
465                   and the Security and Exchange Commission requirements for description  
466                   and valuation of oil and gas reserves, as well as other applicable appraisal  
467                   standards.

468    2.2.8    Step 5 – On-Airport Oil and Gas Exploration.

469            2.2.8.1    Some initial oil and gas exploration activities on-airport, such as  
470                   environmental testing, would not alter the airport surface and would not  
471                   require an ALP change. However, geophysical exploration activities  
472                   involving on-airport heavy equipment (thumper trucks, bull dozers, etc.) use  
473                   and any clearing and grading work to access and occupy airport land for  
474                   geophysical exploration must be assessed by the FAA.

475            2.2.8.2    Additionally, on-airport exploration impacts that are likely to be followed  
476                   by on-airport oil or gas development may need to be reviewed in any NEPA  
477                   documentation as a connected action.

478            2.2.8.3    **Construction.**

479            2.2.8.3.1    The sponsor should escort all exploration crews at all times while on airport  
480                   property to ensure safe airport operating conditions are maintained. If this  
481                   is not possible, a Construction Safety Phasing Plan (CSPP) should be  
482                   prepared. The sponsor is required to review AC 150/5370-2F, Operational  
483                   Safety on Airports during Construction, for regulatory guidance associated  
484                   with construction activity on the airports as well as the CSPP.

485            2.2.8.3.2    An airport sponsor proposing any type of construction or alteration of a  
486                   structure that may affect the National Airspace System (NAS) is required  
487                   under 14 CFR Part 77 to notify the FAA by completing the Notice of  
488                   Proposed Construction or Alteration form (FAA Form 7460-1). Depending  
489                   on the location of the construction activity, the form should be sent to the  
490                   local FAA Airports District Office or Regional Office for review. The FAA  
491                   Form 7460-1 and completion instructions can be obtained at  
492                   [http://www.faa.gov/forms/index.cfm/go/document.information/  
493                   documentID/186273](http://www.faa.gov/forms/index.cfm/go/document.information/documentID/186273).

494            2.2.8.4    **ALP.**

495                   An ALP change may or may not be required at this stage. Airport sponsors  
496                   should advise FAA Airports Division or Region staff of any proposed  
497                   surface disturbance and/or infrastructure development to determine whether  
498                   an ALP change is necessary.

499           2.2.8.5       **Environmental Documentation.**

500                   Even if exploration activities do not necessitate ALP changes, such  
501                   activities may need to be examined under NEPA. If exploration activities  
502                   on-airport property are likely to result in drilling (which would require an  
503                   ALP change and FAA approval thereof), then these may be considered  
504                   connected actions under NEPA. In this case, the NEPA review must be  
505                   completed prior to allowing the oil and gas producer to conduct exploration  
506                   activities. An FAA Record of Decision for NEPA may contain additional  
507                   stipulations that should be conveyed in subsequent lease agreements.

508   2.2.9       Step 6 – Developing an On-Airport Oil and Gas Well Site Location and Production  
509                   Plan.

510                   The airport sponsor should engage FAA throughout the development of an oil and gas  
511                   well site selection and production plan. Depending on the scope of the proposed oil and  
512                   gas drilling operations, early and frequent involvement with FAA will aid in the  
513                   development of an acceptable plan. The sponsor should develop the plan with future  
514                   airport development in mind to ensure appropriate aeronautical uses take precedence  
515                   over non aeronautical uses such as oil and gas extraction activities. Once a well site  
516                   location and production development plan is drafted, it should be coordinated with the  
517                   FAA with respect to whether it complies with FAA guidance, standards, and other  
518                   requirements.

519           2.2.9.1       **Construction.**

520                   All construction proposed for well drilling, site development and associated  
521                   infrastructure must be submitted in the form of a Construction Safety  
522                   Phasing Plan (CSPP) to FAA for review and airspace determination.. The  
523                   CSPP should be prepared by the lessee/developer in accordance with AC  
524                   150/5370-2 Operational Safety On Airports During Construction (current  
525                   edition) for review and approval by the Airport Sponsor, and submitted to  
526                   the FAA for airspace determination. The sponsor may submit the CSPP to  
527                   FAA on line at [oeaaa.faa.gov](http://oeaaa.faa.gov). The complete CSPP must include but not be  
528                   limited to the following:

- 529                   • Emergency/Fire/Medical Response
- 530                   • Blowout Response
- 531                   • Storm water runoff management
- 532                   • Spill Control Prevention and Countermeasure Plan (SPCC)
- 533                   • Disposal and containment of hazardous materials
- 534                   • Compliance with federal, state and local airport rules and regulations
- 535                   • Wildlife and uncovered ponds and waterway management
- 536                   • Airport areas and operations affected by the construction activity
- 537                   • Personnel and vehicle access

- 538 • Foreign Object Debris (FOD) management
- 539 • Haul routes, roads and excavation material storage and management
- 540 • Notification of construction activities (Form 7460-1) per 14 CFR Part
- 541 77 “Safe, Efficient use and Preservation of Navigable Airspace”.
- 542 • Site monitoring, inspection and enforcement responsibilities.
- 543 • AC 150/5370-2F Appendix 3. Safety and Phasing Plan Checklist must
- 544 be consulted with to include the appropriate provision that is relevant to
- 545 the location of the oil and gas extraction project at the airport.

546 2.2.9.2 **ALP Change.**

547 On-airport oil and gas production is likely to require an ALP change with  
 548 requisite federal approvals. Development of a production plan should  
 549 include proposed ALP changes. The proposed ALP change must detail the  
 550 areas determined off limits to well installations and supporting  
 551 infrastructure. Areas that will be used for exploration and areas that may be  
 552 used for well site development must be identified. In conjunction with the  
 553 Form 7460 submittal for actual well site construction and drilling, the  
 554 airport must submit an ALP change showing the well site and all supporting  
 555 on airport infrastructure.

556 2.2.9.3 **Environmental Documentation.**

557 2.2.9.3.1 The airport sponsor must consult and assist the FAA in complying with the  
 558 requirements of all applicable environmental laws and regulations,  
 559 including, without limitation, the National Environmental Policy Act, 42  
 560 U.S.C. 4321 et seq. (NEPA), the Council on Environmental Quality  
 561 Regulations for Implementing the Procedural Provisions of NEPA, 40 CFR  
 562 parts 1500-1508, Department of Transportation Order DOT 5610.1C,  
 563 Procedures for Considering Environmental Impacts, FAA Order 1050.1E,  
 564 Environmental Impacts: Policies and Procedures, Order 5050.4, NEPA  
 565 Implementing Instructions for Airport Actions, and all other applicable  
 566 environmental statutes, regulations, orders, and directives.

567 2.2.9.3.2 The FAA encourages airport sponsors proposing oil and gas production  
 568 activities on federally obligated airport property to consult with the FAA  
 569 about environmental review and documentation as early in the process as  
 570 possible. The FAA will determine the appropriate level of environmental  
 571 review and NEPA documentation based on the facts and circumstances of  
 572 each proposed oil and gas operation. Depending on the level of NEPA  
 573 documentation required, either the FAA or the airport sponsor will take the  
 574 lead in preparing the NEPA documentation. See Chapter 3, Section 4 for  
 575 additional detail on environmental review considerations.

- 576 2.2.10 Step 7 – Oil and Gas Lease Signed and Development Approved.  
577 With an executed lease, the oil and gas exploration and well site development may  
578 proceed as described below in conformance to airport obligations and FAA  
579 requirements.
- 580 2.2.11 Step 8 – Individual Well Site Approvals.
- 581 2.2.11.1 As provided under an acceptable oil and gas lease, the airport sponsor must  
582 have approval authority for each individual well prior to drilling, regardless  
583 of whether the state, county, or municipality issues individual well permits  
584 for drilling. The airport sponsor’s approval is contingent on FAA’s ALP  
585 approval following an environmental determination for the proposed on  
586 airport well site.
- 587 2.2.11.2 For the FAA approvals, the following submittals are required prior to well  
588 site construction and operation. The FAA approval process, described in  
589 Chapter 3, will consider all individual well site activities including on-  
590 airport construction and drilling of the well, hydraulic fracturing, and oil  
591 and gas production.
- 592 2.2.11.2.1 Construction.  
593 Form 7460-1 must be submitted to the FAA by owner/operators for any  
594 proposed facilities on airport owned property that will be above grade.  
595 Form 7460-1 must be received at least 45 days prior to oil and gas  
596 developers erecting drilling rigs or other towering structures. The sponsor  
597 and owner/operator of any identified FAA system or facility should agree to  
598 the advance notification time of construction activities and delineate it in  
599 the CSPP in order to address or mitigate any impact caused by drilling  
600 activity. The oil and gas developer/driller shall complete a Safety Plan  
601 Compliance Document (SPCD) for all construction on airport property and  
602 submit the plan to the Sponsor. The Airport Sponsor shall approve the  
603 CSPP and the SPCD prior to issuance of a notice-to-proceed/construction.
- 604 2.2.11.2.2 Well Site Approval (per Form 7460 / ALP Approval).  
605 The sponsor must approve each individual well prior to drilling activities.  
606 This is in addition to any state, county, or municipality well drilling and  
607 production permitting and inspection authority. The airport’s construction  
608 approvals and inspection control on-airport well site construction, drilling,  
609 fracturing, and operating of that particular well. Approved well sites are to  
610 be shown on the ALP and the revised ALP approved by FAA prior to  
611 construction.
- 612 2.2.11.2.3 Environmental Documentation.  
613 If any on-airport drilling site or other on-airport facility related to oil and  
614 gas operations was not examined in the initial NEPA documentation  
615 (described in Step 6, and below in Chapter 3 Section 4), separate NEPA

616 environmental analysis must be undertaken and documentation developed  
617 for each of the new drilling sites. In this event, the airport sponsor should  
618 notify the FAA as soon as possible about the proposed location of a new  
619 well site or facility. The FAA will determine the appropriate level of  
620 environmental review and NEPA documentation required based on the facts  
621 and circumstances of each proposed new well site or facility and the extent  
622 of previous review. Drilling operations occurring in the same time frame  
623 may need to be addressed in one environmental document to avoid  
624 segmentation under NEPA (see Order 5050.4B, paragraph 905.c.(1) and  
625 (2)).

626 2.2.12 Step 9 – Interim Well Site Reclamation.

627 Once the well has been drilled, the sponsor may want the oil and gas company to  
628 conduct interim reclamation to minimize the footprint of disturbance by the well site.  
629 The portions of the cleared well pad site that are not needed for operational and safety  
630 purposes can be re-contoured to blend with the surrounding area. This area can then be  
631 re-vegetated within a few feet of production facilities.

632 2.2.13 Step 10 – Well Closure and Reclamation.

633 The well closure and site restoration must be done in accordance with the regulatory  
634 requirements of the state and local agency with jurisdiction over oil and gas production.  
635 Upon well closure, the airport should secure a “clean closure” or “no further action”  
636 letter from the state regulatory agency.

637 2.2.13.1 **Construction.**

638 The reclamation process will involve a certain amount of reconstruction  
639 efforts to restore property to previous operational standard. The airport  
640 sponsor will once again approve a CSPP as part of the well closure and  
641 reclamation process. Details for the CSPP can be obtained from AC  
642 150/5370-2F, Operational Safety on Airports During Construction.

643 2.2.13.2 **ALP.**

644 Once a well site has been closed and abandoned, the airport sponsor must  
645 submit the corresponding changes to the ALP and must reference  
646 reclamation requirements.

647 2.2.13.3 **Environmental Documentation.**

648 Well closure and reclamation activities should be anticipated and addressed  
649 in any NEPA documentation completed during the development of the oil  
650 and gas production planning process. Depending on the amount of time that  
651 has passed since the initial production plan was prepared and the associated  
652 NEPA documentation completed, a new NEPA document may need to be  
653 prepared for well closure and ALP approval. If closure activities were  
654 reviewed at the outset, and remain applicable, a written re-evaluation may  
655 be adequate. If conditions have changed substantially, additional review of  
656 closure activities and/or ALP changes may be required.

657 2.3 **Airport Sponsor Compliance.**

658 2.3.1 Failure to adhere to any of the requirements described in this AC, the airport sponsor's  
659 grant assurances, or the instruments of surplus and non-surplus property conveyances  
660 may cause the airport sponsor to violate its federal obligations. If the FAA finds an  
661 airport sponsor violated its federal obligations, the FAA may require corrective action  
662 to bring the sponsor back into compliance.

663 2.3.2 If the airport sponsor chooses not to initiate voluntary corrective action, which may  
664 include terminating or amending the oil and gas lease to ensure the sponsor holds  
665 sufficient rights, title and interest in the land to operate and maintain the airport in  
666 compliance with FAA requirements, the FAA may take formal procedural action under  
667 14 CFR Part 16. If the FAA finds the sponsor in formal noncompliance, the FAA may  
668 issue an order terminating eligibility for grants pursuant to 49 U.S.C. §§ 47106(d) and  
669 47111(d), and order a suspension of the payment of grant funds. Additionally, costs to  
670 restore or replace facilities damaged or to restore adequate title to airport land are not  
671 eligible for funding under the Airport Improvement Program. Corrective actions would  
672 be funded by oil and gas revenues secured and other non-airport funds. Site  
673 remediation may not be supported with AIP funds or airport revenue.

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DELIBERATIVE DRAFT

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**CHAPTER 3. FAA REVIEW PROCESS**678 3.1 **Compliance Reviews.**

679 The FAA will review the lease and the proposed oil and gas production plan for  
680 incorporation of sufficient restrictions for the sponsor to maintain compliance with its  
681 federal aid obligations and assurances, including the following.

682 3.1.1 Airport Attorney's Certification of Good Title.

683 The airport attorney's re-certification must be explicit that the lease restrictions are  
684 enforceable under state law and that the airport maintains good title for public airport  
685 purposes (Grant Assurance 4). The certification should identify and describe the  
686 sponsor's ability to ensure the following:

- 687 • **No Access or Use to Restricted Areas.** The lease must describe those areas of the  
688 airport that the developer/lessee has no surface access, e.g. the AOA, other areas  
689 where there is risk of conflict with safe airport uses and operations. (grant assurance  
690 5, 19 and 20)
- 691 • **Subordination of Mineral Estate to Aeronautical Use.** The lease must  
692 acknowledge the airport use of the property and that the developer/lessee use of the  
693 surface is subordinate to the airport use of the property. The lease must include a  
694 clause requiring all oil and gas activities and operations is subordinate to the airport  
695 sponsor's federal obligations.
- 696 • **Permitting.** All construction and use of airport property is subject to approval by  
697 the airport sponsor and must comply with airport rules and regulations (incorporated  
698 by reference). FAA Form 7460, CFR Title 14 Section 77.9 and CSPP  
699 determinations are required prior to commencing any construction (grant assurance  
700 20).
  - 701 ○ The lease should include a clause that incorporates by reference the airport's  
702 rules and regulations governing on-airport construction that apply to oil and gas  
703 operations.
- 704 • **Compliance with Airport Revenue Requirements.** All use of airport property for  
705 nonaeronautical purposes must be at FMV and in accordance with the FAA's Policy  
706 and Procedures Concerning the Use of Airport Revenue (Revenue Use Policy at 64  
707 FR 7696).
- 708 • **Insurance.** The developer/lessee must maintain adequate insurance for general  
709 liability and environmental remediation for the proposed development; production  
710 and ultimate closing of wells (grant assurance 20 and 21).
- 711 • **Indemnity and Hold Harmless Clause.**
- 712 • **Bonding.** The lessee should maintain adequate bonding to cover its liabilities and  
713 obligations incurred under the lease.
- 714 • **Environmental Representations, Warranties.** These provisions concern  
715 representations and warranties each party to the lease makes concerning the

716 environmental condition of the leased property prior to, during, and after oil and gas  
 717 drilling operations. These provisions also apportion liability between the parties to  
 718 the lease in the event of environmental contamination resulting from oil and gas  
 719 drilling operations.

720 • **No Warranty of Title.** The airport provides no assurance of title for the lessee. The  
 721 lessee (gas/oil developer) will have to insure adequate title for its gas/oil production.

722 • **Compliance with Laws.** The lessee must construct all facilities and conduct all  
 723 operations in strict compliance with all applicable federal (including FAA), state,  
 724 and local laws, codes, rules, regulations, ordinances, permits, as well as the airport's  
 725 design criteria and the airport's rules and regulations regarding oil and gas  
 726 operations. This includes the instrument(s) entered into between the sponsor and the  
 727 United States creating and/or perpetuating the sponsor's federal obligations.

728 • **Assignment and Subletting.** The lessee must not assign the lease or sublet the land  
 729 (leased premises) without the prior written approval of the airport.

### 730 3.1.2 Federal Register Notice for Modification of Assurances.

731 A Federal Register Notice is required when there is a change from aeronautical use to  
 732 non-aeronautical use of (1) federal surplus property (47151(d)), (2) non-surplus  
 733 property (47125), or (3) property purchased with federal assistance (47107(h)). In  
 734 addition, environmental notices must be filed in the Federal Register. Notice is not  
 735 required for a release of aeronautical property that is part of a major environmental  
 736 action in which public notice and comment is an integral part of the environmental  
 737 review. Please refer to CGL 2003-2 for Procedures for Public Notice for a Change in  
 738 Use of Aeronautical Property.

## 739 3.2 **Safety and Construction Reviews.**

740 3.2.1 The Construction Safety Phasing Plan (CSPP) must be prepared by the lessee/developer  
 741 in accordance with AC 150/5370-2F and Appendix 3 (current edition) for review and  
 742 approval by the Airport and submitted to the FAA for the airspace determination. The  
 743 developer's CSPP should contain, but not limited to the following.

- 744 • Emergency/Fire/Medical Response
- 745 • Blowout Response
- 746 • Storm water runoff management
- 747 • Spill Control Prevention and Countermeasure Plan (SPCC)
- 748 • Disposal and containment of hazardous materials
- 749 • Compatible Land Use and Mitigation of Hazardous Wildlife Attractants
- 750 • Personnel and vehicle access
- 751 • Foreign Object Debris management
- 752 • Haul routes, roads and excavation material storage and management

- 753           • Site monitoring, inspection and enforcement agency
- 754 3.2.2    The CSPP may be submitted on-line at [oeaaa.faa.gov](http://oeaaa.faa.gov). Approval of the CSPP to  
755 proceed with construction is the airport sponsor's responsibility.
- 756 3.2.3    **Form 7460 / Airspace Notification.**  
757           The Form 7460 and other airspace notification requirements may be submitted on-line  
758 at [oeaa.faa.gov](http://oeaa.faa.gov).
- 759 3.2.4    **Safety Risk Management** (as applicable at the airport).
- 760 3.3       **ALP Change.**
- 761 3.3.1    Oil and gas well sites and related facilities need to be shown on the ALP, if any  
762 component of the operation is to be located on airport property (See AC 150/5070-6,  
763 paragraph 1002). Sponsors should show all components of the gas/oil production  
764 process even if only one component is actually on airport property and the remainders  
765 are off of airport property. Accurate representation of the facilities on the ALP will  
766 eliminate confusion about the planned location for the various components of the  
767 system.
- 768 3.3.2    The following oil/gas well site and supporting facilities should be included on the ALP:
- 769           • Well site
- 770           • Well heads, including injection wells should be indicated
- 771           • Tanks (Storage, compression, wastewater, etc)
- 772           • Fracturing fluids storage pits and ponds
- 773           • Dehydrator and compressor stations
- 774           • Buildings or facilities
- 775           • Collector oil and gas pipelines
- 776           • Fracturing fluid pipelines
- 777           • Utilities lines/right of way serving the well site
- 778           • Gas Transmission lines
- 779 3.3.3    Proposed or planned on-airport oil/gas extraction operations often cannot specify the  
780 exact location of facilities until the exploration phase is complete. In these cases, show  
781 the proposed areas for oil/gas extraction on the land use drawings and label the known  
782 components that would be located in each area. Note that this may result in a  
783 “conditional” ALP approval until additional details of the production plans are better  
784 known and an “unconditional” ALP can be approved (see Environmental  
785 Considerations).

786 3.3.4 The only parts of steps 1-10 (chapter 2) appropriate for inclusion on the ALP are Step.8  
787 well sites approved and Step 10 for the removal and closure/reclamation of a well site.  
788 The remaining phases are construction phases that would undergo separate airspace  
789 reviews as would any on-airport construction activity. It is expected that most oil/gas  
790 well sites and any supporting construction on airports require environmental review to  
791 meet requirements of NEPA as described in FAA Orders 1050.1E and 5050.4B, (see  
792 below).

793 3.4 **Environmental Considerations.**

794 3.4.1 Airport sponsors should coordinate with FAA staff early in the process of considering  
795 oil and gas extraction activities so that any necessary environmental review is  
796 undertaken efficiently. The extent of the environmental review and the timeframe for  
797 issuance of a decision by the FAA, if any, will depend on the scope and nature of the  
798 proposed oil and gas operations. NEPA review must be complete in accordance with  
799 CEQ's NEPA regulations and FAA Orders 1050.1E and 5050.4B at the time of FAA's  
800 decision on a major federal action, such as an ALP change (see FAA Order 5050.4B,  
801 paragraph 9.g.(3) and Section 202).

802 3.4.2 Oil and gas production involves geotechnical exploration and testing, drilling, and  
803 construction of well heads to produce the resource. Initial exploration activities are  
804 similar to planning and may not require federal involvement. However exploration  
805 activity with on airport occupancy and/or disturbance of resources, as necessary for the  
806 construction, drilling and production will require NEPA review as a precursor to ALP  
807 approval. These actions are all ultimately connected to production of the oil or gas. A  
808 NEPA review should evaluate as much of the proposed oil and gas development cycle  
809 as possible when the ALP decision is required, avoiding segmentation of the process.

810 3.4.2.1 **Unconditional, Conditional, or Mixed ALP Approval.**

811 There are three types of ALP approvals that can be issued by the FAA –  
812 conditional, unconditional, or mixed – and the level is based on the extent  
813 of planning and environmental review possible at the time.

814 3.4.2.1.1 Unconditional Approval.

815 If the locations of the well sites are known, and changes to the ALP can be  
816 clearly defined to show all development infrastructure, a NEPA document  
817 should be prepared for an unconditional ALP approval.

818 3.4.2.1.2 Conditional or Mix Approval.

819 • A NEPA evaluation for conditional or mixed approval may be the most  
820 effective method of environmental review, if a proposal involves  
821 considerable exploration, well sites are undetermined, or the proposed  
822 oil and gas development project is especially large or phased. The exact  
823 locations of individual well sites on airport property may not be known  
824 until after seismic and other testing have determined the locations.

825 Even when precise well locations are unknown, other information such  
826 as geological testing methods, as well as drilling methods, drill rigs, and  
827 equipment to be used for the proposed operations, will be well known at  
828 the outset.

829 • NEPA review for conditional approval should include as much  
830 information about the proposed oil and gas development as possible,  
831 with the anticipation that supplemental details, such as specific well  
832 head locations, will be reviewed when they are known. The NEPA  
833 documentation for a conditional approval should be developed in such a  
834 way as to anticipate and facilitate, to the best extent possible, any  
835 subsequent reviews such that they can be completed in an efficient  
836 manner. In this light, a programmatic NEPA document might be  
837 considered as the most appropriate and efficient approach for multi-  
838 phased and long-term oil and gas development projects.

839 • Note that while a conditional ALP approval normally qualifies as a  
840 categorical exclusion (CE), oil and gas exploration on airport land is  
841 done in anticipation of establishing wells and there is reasonable  
842 expectation that ALP changes will need to depict those facilities,  
843 making an administrative CE inappropriate. When a conditional ALP  
844 approval is given, the approving FAA official has not authorized the  
845 airport sponsor or project proponent to begin building the facilities  
846 shown on the conditionally approved ALP. The sponsor or proponent  
847 may start building those facilities only after the FAA completes its  
848 environmental analysis of those facilities and the approving FAA  
849 official issues an unconditional approval of the ALP depicting those  
850 facilities (Order 5050.4B, Section 202c).

#### 851 3.4.2.2 **FAA EIS.**

852 If significant impacts are anticipated from proposed oil or gas development  
853 project, or an environmental assessment (EA) finds there may be significant  
854 impacts which cannot be mitigated to reduce such impacts below applicable  
855 significance thresholds, an environmental impact statement (EIS) will be  
856 necessary to satisfy NEPA requirements. While EAs may be prepared by  
857 sponsors, preparation of an EIS must be directed by the FAA. In these  
858 circumstances airport sponsors should coordinate with FAA staff on how  
859 best to proceed with environmental review.

#### 860 3.4.2.3 **NEPA Record of Decisions for Proposed Oil and Gas Development.**

861 If an EA finds no significant impacts, the FAA may conclude its NEPA  
862 review for the proposed project with a Finding of No Significant Impact  
863 (FONSI) or a FONSI and a Record of Decision (ROD; FONSI/ROD). For  
864 some EAs and all EISs the FAA concludes its NEPA review with a Record  
865 of Decision (ROD).

866 3.4.3 Content of NEPA Documents for On-airport Oil/Gas Development.

867 NEPA documents should, as applicable:

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- State that on-airport development of oil and gas production is subordinated to the airport use of the obligated land, including restricted access and adherence to FAA requirements for on-airport construction and non-aeronautical operations (see Appendix B, for applicable lease terms).
  - Describe the entire lifecycle of proposed oil and gas operations including exploration activities, construction schedule and methods, facilities for development and production, and plans for well closure.
  - Describe the proposed facilities including:
    - any new access roads
    - the well design and site preparation,
    - the drilling methodologies to be employed,
    - water and fracturing fluid preparation and storage,
    - the hydraulic fracturing details including geologic strata and drilling depths,
    - the collection, handling, and proper disposal of flow-back and waste water,
    - the infrastructure for collection of oil and gas, and
    - Disclosure of other relevant processes that may have impacts to the airport or environmental resources
  - Proposed oil and gas projects are likely to involve collector pipelines, which will have distinct considerations with regard to construction and maintenance, such as clearing, trenching, stringing of pipe, grading, and right-of-way maintenance.
  - The need for compliance monitoring or maintenance procedures as may be described in the sponsor's approved CSPP should be explained in the NEPA document, along with anticipated well closure and site reclamation. Materials submitted as part of the CSPP may provide details on these processes.
  - In addition to the standard components of an FAA NEPA evaluation stipulated in Order 5050.4B, it may be necessary to cross reference or include as appendices components of the CSPP, such as the spill prevention, containment, and counter measures plans.
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896 3.4.4 Public Involvement.

897 The public involvement requirements of FAA Order 5050.4B will apply to EAs and  
898 EISs for mineral extraction, and actions to meet applicable public involvement  
899 requirements should be clearly demonstrated in the NEPA document, (see Order  
900 5050.4B paragraph 9(i)).

- 901 3.4.5 Noise Evaluation.
- 902 3.4.5.1 FAA policies for evaluating noise recognize that there are settings where  
903 the 65 DNL standards for noise measurement may not apply. Mineral  
904 extraction is one of these circumstances.
- 905 3.4.5.2 For mineral extraction projects, the responsible FAA official will determine  
906 the appropriate noise assessment criteria based on specific uses in that area.<sup>7</sup>  
907 For mineral extraction projects, the vast majority of noise is generated  
908 during construction. Mineral extraction projects should expect 1)  
909 construction noise impacts from construction activities at the well pad sites  
910 including drilling and hydraulic fracturing as well as heavy truck traffic,  
911 and 2) from operation of the well pad sites including compressor stations  
912 and truck traffic traveling to and from the sites. Noise from drilling rigs  
913 should be treated as stationary construction noise, and the guidance on  
914 construction noise from non-aviation sources in Order 5050.4B and its  
915 companion Environmental Desk Reference for Airport Projects should be  
916 followed.
- 917 3.4.5.3 In addition, there may be state or municipal construction noise ordinances  
918 that apply. In general, ambient noise levels should be compared to  
919 estimated construction noise levels at various distances for horizontal  
920 drilling and for well pad preparation. This assessment should be based on  
921 an assumption that all pieces of construction equipment typically used for  
922 horizontal drilling and well pad preparation activities would operate at the  
923 same time.
- 924 3.4.5.4 During construction phase of a project, drill rigs are generally in operation  
925 around the clock and 7 days a week. The estimated time to drill a single  
926 well is 15 – 20 days, with another 7 – 10 days for the hydraulic fracturing  
927 process after the drilling is complete. NEPA documents will be able to  
928 discuss this as construction noise.
- 929 3.4.5.5 Guidance on modeling surface transportation noise can be found in the  
930 Environmental Desk Reference for Airport Actions, Chapter 1, Sections 6.h  
931 and 6.i.<sup>8</sup> In the absence of specific federal, state, or local noise  
932 requirements applicable to a particular mineral extraction project, use the  
933 FAA’s criteria for significant noise exposure in FAA Order 1050.1E to  
934 evaluate the potential impacts at noise sensitive receptors as a result of the  
935 proposed project. Noise from single events generally has little impact on  
936 the calculation of DNL noise contours. However, tables and formulas can

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<sup>7</sup> FAA Order 5050.4B, paragraph 9(n).

<sup>8</sup> [http://www.faa.gov/airports/environmental/environmental\\_desk\\_ref/media/desk\\_ref\\_chap17.pdf](http://www.faa.gov/airports/environmental/environmental_desk_ref/media/desk_ref_chap17.pdf)

937 be used to gain an estimate of how loud noise will be at certain distances,  
938 and whether or not it is likely to exceed 65 dB. If mitigation such as sound  
939 barriers cannot bring estimated noise to a less than significant level, or if  
940 finer resolution assessment of noise levels is needed, noise modeling may  
941 be required or an EIS may need to be prepared.

942 3.4.5.6 If the NEPA review has established environmental mitigation commitments  
943 to reduce potential impacts below a threshold of significance, these will be  
944 reiterated in the FAA ROD and must be stipulated in the subsequent lease  
945 terms.

946 3.4.6 Subsequent Review and Approval of Well Sites.

947 Subsequent review and approval, such as to add specific well site locations, will be  
948 treated as written supplement or re-evaluations as applicable in accordance with Order  
949 5050.4B section 1401.

950 3.5 **Best Management Practices.**

951 Best management practices in oil and gas development can improve technical and  
952 operational efficiency while ensuring safety and environmental protection. Best  
953 management practices are actions that most efficiently, practically, and cost-effectively  
954 accomplish the task of oil and gas development with the least amount of associated  
955 impacts. With respect to oil and gas operations, best management practices can vary  
956 based on differences in geology, land use, water resources, and regulations. Since the  
957 unconventional development of oil and natural gas resources are a rapidly growing and  
958 evolving set of practices and the environmental impacts are not fully understood, best  
959 management practices are still being developed. Airport sponsors are encouraged to  
960 identify those best management practices that could be effectively implemented with  
961 respect to the proposed oil and gas operations. FAA ADOs and Regional Offices  
962 reviewing proposals for such oil and gas operations should also identify applicable best  
963 management practices, which may also be used as mitigation measures contained within  
964 the NEPA documentation. For more information on best management practices in the  
965 context of shale gas production, see Department of Energy, Secretary of Energy  
966 Advisory Board, Shale Gas Production Subcommittee 90-Day Report, August 18, 2011;  
967 Second Ninety Day Report, November 18, 2011.

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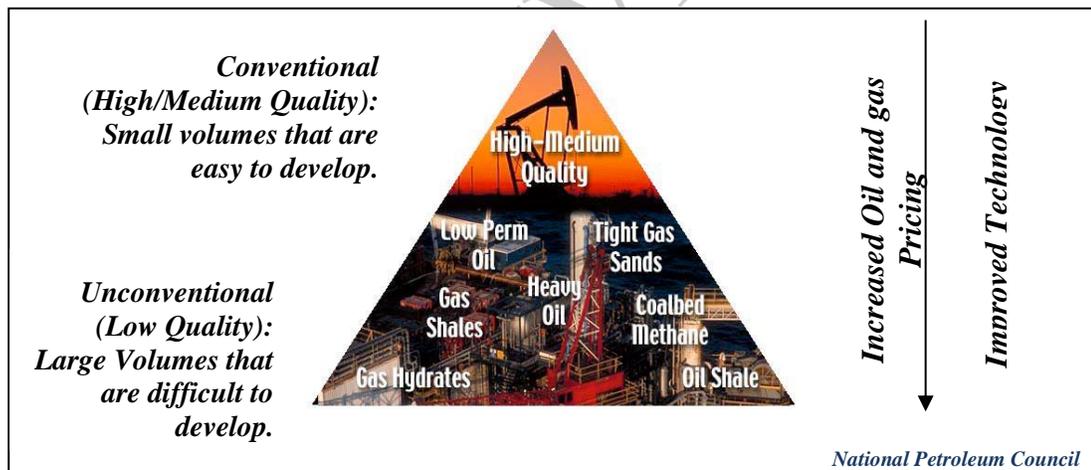
1 **APPENDIX A. UNCONVENTIONAL OIL AND GAS PRODUCTION**

2 **A.1 Oil and Gas Production in the U.S.**

3 A.1.1 Conventional oil and natural gas production is “crude oil and natural gas that is  
4 produced by a well drilled into a geologic formation in which the reservoir and fluid  
5 characteristics permit the oil and natural gas to readily flow to the wellbore.”<sup>9</sup>  
6 Conventional production involves high quality reserves of oil and gas that are relatively  
7 easy to develop using conventional drilling and extraction methods.

8 A.1.2 Unconventional oil and gas production is an umbrella term for oil and natural gas  
9 produced by means that do not meet the criteria for conventional production. Beginning  
10 in the 1980s and expanding through the present, “unconventional oil and gas  
11 production”<sup>10</sup> has developed lower quality oil and gas reserves from shale, tight sand  
12 (low permeable sandstone), and coal bed methane gas and oil deposits in the United  
13 States. Figure A-1 describes petroleum industry distinctions between conventional and  
14 unconventional oil and gas production<sup>11</sup>.

15 **Figure A-1. The Resource Triangle for Oil and Gas Reserves**



<sup>9</sup> Department of Energy (DOE), Energy Information Agency (EIA) Glossary (DOE EIA Glossary)  
<http://www.eia.gov/tools/glossary/index.cfm?id=C>

<sup>10</sup> What is termed "unconventional" at any particular time is dependent on resource characteristics, exploration and production technologies, the current economic environment, and the scale, frequency, and duration of production from the resource. (DOE EIA Glossary).

<sup>11</sup> National Petroleum Council (NPC), Topic Paper # 29, Unconventional Gas. Working document of the NPC Oil and Gas Study made available July 17, 2007. NPC Topic papers can be downloaded from the NPC website at [www.npc.org](http://www.npc.org).

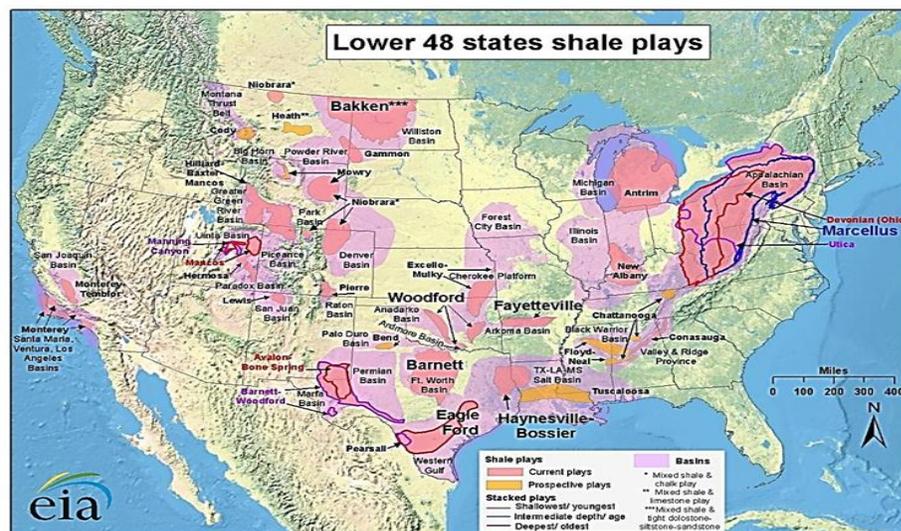
17 A.2 **Shale Oil and Gas Production.**

18 A.2.1 Production of oil and gas from shale formations relies on technological advances that  
 19 combine hydraulic fracturing and horizontal drilling to produce marketable quantities of  
 20 oil and gas. In contrast to conventional or traditional well sites, shale oil and gas wells  
 21 employ horizontal drilling of multiple wellbores from a single surface well site radiating  
 22 in different directions and different depths to maximize production. The hydraulic  
 23 fracturing process fractures the underlying oil- and gas-holding shale layer to release oil  
 24 and gas to the wellbore for extraction.

25 A.2.2 Hydraulic fracturing involves firing explosive charges along the horizontal bores (3,000  
 26 to 15,000 feet below the surface) to fracture the underlying shale formation holding the  
 27 oil and gas. Then fracturing or stimulation fluid (which contains water, sand, and  
 28 various chemicals, some of which may be toxic) is pumped through the wellbore under  
 29 high pressures to further fracture the shale formation, allowing gas or oil to escape and  
 30 flow to the wellbore. Hydraulic fracturing uses large volumes of water (between 2 and  
 31 5 million gallons for horizontal wells). Hydraulic fracturing is largely regulated at the  
 32 state level, and most states with shale formations have regulatory programs for oil and  
 33 gas exploration and production. More information on hydraulic fracturing is available  
 34 from the references included in Appendix C.

35 A.2.3 The lower 48 states have a wide distribution of oil and gas shale formations. The most  
 36 currently active shale formations include the Barnett Shale (in Texas), the  
 37 Haynesville/Bossier Shale (in Louisiana), Bakken Shale (in North Dakota) and the  
 38 Marcellus Shale in portions of New York, Pennsylvania, Ohio, West Virginia, and  
 39 Maryland. While there are shale formations in northern Alaska, there are no known  
 40 formations in Hawaii. Figure A-1 provides the 2010 Energy Information  
 41 Administration map of the “Shale Plays” in the lower 48 states.

42 **Figure A-1. 2010 Energy Information Administration Shale Play Map**



43 Source: Energy Information Administration based on data from various published studies. Updated May 9, 2011

**APPENDIX B. SAMPLE OIL AND GAS LEASE PROVISIONS FOR ON-AIRPORT  
DEVELOPMENT**

Term/Condition	Description/Sample Language
<b>A. Subordination of Mineral Estate; Limited Access (Required)</b>	<p>Lessee acknowledges that Lessor operates a public use airport on the Land and that Lessor has or may have plans to construct new structures and improvements on the Land, or to expand the structures and improvements currently existing on the Land. As such, Lessee's leasehold interest as described herein, including, without limitation, its use of and access to the Land for the purpose of exploring, drilling, and producing oil and gas, laying pipelines, and buildings roads, tanks, and other facilities thereon to produce, store, treat, and process oil and gas, are hereby expressly subordinated in all respects to the use of the Land as a public use airport and current and future Federal grant obligations.</p> <p>Drill site operations and all related operations shall be limited to designated portions of the Land that are currently undeveloped and not planned to be developed as detailed in the airport's most recent master plan. Such locations are identified on Exhibit ___ to this Lease. Lessee agrees to conduct its operations so as not to interfere with Lessor's use of the Land as is consistent with the operations of a public use airport. Lessee shall not make, allow, or permit any operations that involve a use of the Land's surface that would or might interfere with any actual or contemplated use of the surface of the Land by Lessor, without the prior written consent of Lessor.</p> <p>Lessee's right of ingress and egress to and across the Land shall not be permitted without the prior written consent of Lessor. Such consent shall not be unreasonably withheld, as long as such ingress and egress does not interfere with the use of the Land a public use airport and the sponsor's federal obligations. Moreover, all access to the Land shall occur so as not to violate security procedures in place at the time the access is sought and so as not to contravene any FAA regulations, rules or orders.</p> <p>Lessee shall construct all facilities, including roads, in</p>

Term/Condition	Description/Sample Language
	<p>strict compliance with all applicable federal, state, and local laws, codes, rules, regulations, ordinances, permits, and [the Airport's design criteria and rules].</p> <p>Lessee shall take no action that could compromise the safe and efficient use of the Land as a public use airport with concurrent commercial development. No signage, other than that required by law and posted so as not to conflict with or distract from required airport signage, shall be allowed without the prior written approval of Lessor.</p> <p>Lessee agrees that in the event the location of any well drilled on the Land pursuant to this Lease interferes with Lessor's future use or development of the Land, then Lessee shall, upon Lessor's request, plug and abandon such well and associated facilities, within one hundred twenty (120) days of such request. (Establish amortization of cost terms and purchase and valuation methods).</p>
<p><b>B. Compliance with laws (Required)</b></p>	<p>Lessee shall conduct all operations hereunder in strict compliance with the laws, codes, rules, regulations, ordinances, and permits, as applicable, of [the applicable state regulatory agencies] and the FAA, and in accordance with all other federal, state, and local laws, codes, rules, regulations, ordinances, permits, and [the Airport's design criteria and rules] and the airport sponsor's federal obligations.</p> <p>The terms of the lease must comply with the airport sponsor's federal obligations. This also includes abiding by FAA's Policy and Procedures Concerning the Use of Airport Revenue (Revenue Use Policy, 64 FR7696). This policy sets forth the permitted and prohibited uses of airport revenue, set forth in statute, in accordance with grant assurance 25.</p>
<p><b>C. Permitting (Required)</b></p>	<p>All construction and use of airport property under this Lease shall be subject to the prior approval by Lessor, and must comply with the Airport rules and regulations, which are incorporated herein by reference. Further, all construction and use of airport property as contemplated by this Lease shall comply with all FAA rules, regulations and orders, including,</p>

Term/Condition	Description/Sample Language
	<p>without limitation, FAA’s AC 150/5370-2, Operational Safety on Airports During construction. Any activities done on airport property must meet FAA requirements for notification and approvals including but not limited to Notice of Proposed Construction or Alteration (FAA Form 7460-1) prior to commencing any construction. Finally, all construction and use of airport property as contemplated by this Lease shall be consistent with all the findings and mitigation measures, if any, set forth in the environmental documentation prepared in compliance with the National Environmental Protection Act.</p>
<b>D. Airport Rules and Regulations</b>	<p>All current and future [Airport’s rules and regulations], including, without limitation, all rules and regulations concerning oil and gas exploration, development, transportation, or any other related operations or activities, are hereby incorporated into this Lease by reference and made a part hereof.</p>
<b>E. Insurance</b>	<p>Lessee shall acquire and, at all times while this Lease is in effect, maintain insurance covering all of its operations on the Land, including, without limitation, all work performed by it or on its behalf by contractors, subcontractors, and others, naming Lessor and related individuals and entities designated by Lessor as additional insureds. The policies shall include coverage for comprehensive general liability for bodily injury and property damage, environmental pollution liability, control of well or blowout coverage for the cost of cleanup and surface remediation, workers’ compensation, and any other coverages and insurance reasonably required by Lessor. Any insurance policy obtained and maintained as required in this Lease shall not be subject to limitations, conditions, or restrictions deemed inconsistent with the intent of the insurance requirements to be fulfilled by Lessee. The bankruptcy, insolvency, or denial of liability by any insurance company providing coverage hereunder shall not exonerate or in any way relieve Lessee from liability.</p>
<b>F. Bond, Irrevocable Letter of Credit</b>	<p>Prior to the commencement of any construction or</p>

Term/Condition	Description/Sample Language
<b>G. Indemnity and Hold Harmless Clause</b>	<p>drilling operations under this Lease, Lessee shall provide to Lessor a security instrument in the form of a bond or letter of credit in the form and amount reasonably acceptable to the Lessor; provided, however, that such security instrument shall, at a minimum, adequately cover Lessee's obligations and liabilities for the construction, drilling or other activity under this Lease for which the security instrument was obtained. Any such security instrument shall remain in full force and effect throughout the period of performance, and for a reasonable period thereafter, of the construction, drilling or other activity under this Lease for which the security instrument was obtained.</p> <p>Lessee agrees to indemnify, defend and hold harmless Lessor, and Lessor's representatives, board members, council members, agents, employees, contractors, and any other person or entity acting by, through or under Lessor's direction or control, Lessor's independent contractors, and Lessor's successors and assigns, against all expenses, claims, demands, liabilities, and causes of action of any nature for injury to or death of persons and loss or damage to property, including, without limitation, attorneys' fees, experts' fees, and court costs, caused by Lessee's operations on the [Land] or Lessee's marketing of production from the [Land] or any violation of any environmental requirements by Lessee. As used in this paragraph, the term "Lessee" shall include Lessee, its agents, employers, contractors, and any other person acting under its direction or control, and its independent contractors. This indemnity shall be as great as the law allows, and Lessee shall indemnify and hold harmless for all loss, cost, damage, or expense of every kind and nature, whether the result of the sole negligence, concurrent or comparative negligence, or strict liability of Lessee. To the extent, and only to the extent, the foregoing indemnities are, by law, only enforceable if supported by available liability insurance, Lessee agrees that the insurance provided for in this Lease is intended to satisfy any coverages and dollar limits of liability provided by applicable statutes. To the extent, and only to the extent, the foregoing indemnities are, by law, either inapplicable</p>

<b>Term/Condition</b>	<b>Description/Sample Language</b>
	<p>or not enforceable, Lessee and Lessor shall each be responsible for the results of its own actions and for the action of those persons and entities over which it exercises direction and control. Lessee's indemnities set forth herein shall survive the termination or expiration of this Lease.</p>
<b>H. No Warranty of Title</b>	<p>Lessor makes no warranty or assurance of any kind with respect to title to the Land. By acceptance of this Lease, Lessee acknowledges that it has been given full opportunity to investigate and has conducted sufficient investigation to satisfy itself as to the title to the Land, and Lessee assumes all risk of title failures.</p>
<b>I. Assignment and Subletting</b>	<p>Lessee shall not assign this Lease or sublet the [Land] without the prior written consent of Lessor. In the event Lessor consents in writing to any assignment or sublease, the assignee or sublessee shall assume all of Lessee's liabilities, obligations, and duties under this Lease. Further, Lessee shall remain liable for its obligations regardless of any assignment or sublease and any assignee or sublessee shall be jointly and severally liable with Lessee, unless Lessor expressly releases the original Lessee in writing from such liabilities, obligations, and duties.</p>
<b>J. Construction and Surface Restoration</b>	<p>All construction and surface restoration work performed by Lessee shall be undertaken so as to restore the Land to as near its original condition as is reasonable practicable and in strict compliance with all applicable laws, codes, regulations, ordinances, permits and the [Airport's design criteria and rules] and the airport sponsor's federal obligations. Throughout the term of this Lease, including, without limitation, during all drilling activities, Lessee shall keep the Land in as clean a condition as practicable and free from foreign object debris (FOD) and other hazards that may impair the safety of airport operations.</p>
<b>K. Environmental Matters, Environmental Representations and Warranties (AS APPICABLE TO ON-AIRPORT</b>	<ol style="list-style-type: none"> <li>1. The lessee/developer represents, warrants, and covenants the following: <ol style="list-style-type: none"> <li>a. Lessee has obtained and throughout the term of this Lease shall obtain and maintain all</li> </ol> </li> </ol>

<b>Term/Condition</b>	<b>Description/Sample Language</b>
<b>CONSTRUCTION AND OPERATION)</b>	<p>licenses, permits, exemptions, registrations, and other authorizations required under Environmental Laws (as defined below) and shall provide any notices required under Environmental Laws for conducting its operations on the Land. Lessee shall require its sublessees, if any, and contractors to obtain and maintain all licenses, permits, exemptions, registrations and other authorizations required under Environmental Laws for conducting operations on the Land.</p> <p>b. Lessee shall comply and shall cause all of its employees to comply, and shall exercise best efforts to cause its agents, contractors, sublessees or other parties under Lessee's direction and control to comply, and shall include in all subleases a provision requiring the sublessee to comply and all employees, contractors, sublessees or other parties under sublessee's control to comply with all Environmental Laws pertaining to Lessee's (and including third parties under Lessee's direction and control) use of and operations on the Land.</p> <p>c. Lessee shall not cause, contribute to, or permit any Release (as defined below) of any Hazardous Substances (as defined below) or Solid Waste (as defined below) by Lessee or its employees, agents, contractors, sublessees or other parties under sublessee's direction and control, on, at, or from the Land, except in compliance with Environmental Laws.</p> <p>d. Lessee, prior to vacating or surrendering any portion of the Land or as sooner required by Environmental Laws or this Lease, shall remove and dispose of and shall require its employees to exercise its best efforts to require its agents, contractors, sublessees, or any other party under Lessee's direction and control at the Land to remove and dispose of, any materials, debris, tanks, equipment, ponds, vessels, and containers placed by Lessee or its agents, contractors, sublessees,</p>

Term/Condition	Description/Sample Language
	<p>or any other party under Lessee's direction and control at the Land that are composed of or contain Solid Waste or Hazardous Substances (as distinct from actual Releases which have resulted in contamination of the environment and are subject to the provisions herein pertaining to response and compliance actions), at no cost to Lessor and in compliance with Environmental Laws.</p> <p>e. Lessee shall conduct and shall require its employees to conduct, and shall exercise best efforts to cause its agents, contractors, sublessees or other third parties under Lessee's direction and control to conduct its/their activities and operations in a manner consistent with Lessor's duties and obligations under Environmental Laws, including, without limitation, environmental permits issued to Lessor and Lessor's commitments under the State Implementation Plan and the National Environmental Policy Act.</p> <p>f. Lessee acknowledges that Lessor is or may be subject to the [State Discharge Elimination System Program], the National Pollution Discharge Elimination Program (NPDES), and state and federal regulations relating to stormwater discharges, including, without limitation, 40 CFR Part 122, for operations that occur at the Airport. Lessee further acknowledges that it will conduct operations and activities (and shall require its employees to conduct operations and activities, and shall exercise its best efforts to cause its agents, contractors, sublessees or other third parties under Lessee's direction and control to conduct operations and activities) on or related to the Land in compliance with applicable regulations, including 40 CFR Part 122, and any applicable [State Discharge Elimination System Program] and NPDES permits, as these may be amended from time to time.</p>

Term/Condition	Description/Sample Language
	<p>Lessee acknowledges that its cooperation is necessary to ensure compliance with any [State Discharge Elimination System Program] and NPDES permits. Lessee acknowledges that it may be necessary to use best efforts to minimize the exposure of stormwater to materials generated, stored, handled, or otherwise used by Lessee (including third parties under its direction and control), by implementing and maintaining effective “Best Management Practices” as defined in 40 CFR Part 122.2, depending upon the applicability to Lessee’s operations or any activities conducted by Lessee at the Land and as required by any applicable [State Discharge Elimination System Program] or NPDES permit, as these may be amended from time to time. Lessee further acknowledges that any existing [State Discharge Elimination System Program] or NPDES permit issued to Lessor, and any subsequent permit(s), amendments, extensions or renewals thereto, is incorporated by reference in this Lease to the extent affecting Lessee’s operations at or related to its use of the Land. Lessor agrees to notify Lessee of any changes to any portions of such permits applicable to, or that affects Lessee’s operations at or use of, the Land.</p> <p>g. Lessee shall not create or maintain any wildlife attractants without appropriate coverings or other effective mitigation measures. Further, Lessee shall locate all water storage facilities (pits or ponds) in accordance with applicable FAA airport design standards to ensure compatibility with airport operations.</p> <p>h. <b>Right of Entry and Inspection.</b></p> <p>i. Lessor shall have the full right at all reasonable times, and in Lessor’s sole discretion, to enter the sites where Lessee’s operation are located for the</p>

Term/Condition	Description/Sample Language
	<p>purpose of conducting an inspection, assessment, investigation, and regulatory compliance audit. Lessor or its authorized agents may perform testing of the Land as needed, including test borings of the ground and chemical analyses of air, soil, water, and waste discharges. Lessor will provide advance written notice of such entry and inspections, except in case of emergencies, when notice shall not be required.</p> <p>ii. Lessee shall cooperate (and shall require its employees and shall exercise its best efforts to require its agents, contractors, sublessees, or any other third party under Lessee' direction and control to cooperate) in allowing prompt reasonable access to Lessor to conduct such inspection, assessment, audit, or testing. Lessee remains solely responsible for its environmental compliance, notwithstanding any inspection, assessment, audit, or testing.</p> <p>i. <b>Information to be Provided.</b></p> <p>i. If Lessee receives any notice, correspondence, citation, order, warning, complaint, inquiry, claim or demand that is not legally privileged, made confidential by applicable law, or protected as trade secrets (a) concerning any alleged Release of Hazardous Substances or Solid Waste at, on, or from the Land, or into the environment from the Land, or (b) alleging that Lessee or any employee, agent, contractor, sublessee, or any other party under either of the party's direction and control has violated or is about to violate any Environmental Law(s) pertaining to Lessee or third party operations at or use of the Land,</p>

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	<p>or (c) asserting that Lessee or any party under Lessee's direction and control is liable for the cost of remediation or investigation of a Release of Hazardous Substances or Solid Waste on, at, or from the Land, Lessee shall immediately provide written notice to Lessor of the same, including a copy of any related documents.</p>
	<p>ii. Lessee shall provide to Lessor simultaneously with any submittal to any governmental agency, a complete copy (including exhibits and attachments) of any reports or notices required by Environmental Laws, and which are not legally privileged, made confidential by applicable law, or protected as trade secrets, regarding (a) alleged failure to comply with any Environmental Laws or (b) the Release of any Hazardous Substance or Solid Waste in, on, or into the environment, arising out of the past or present operations at or use of the Land by Lessee or any party under Lessee's direction and control.</p>
	<p>iii. Each party shall provide the other with reasonable advance notice of any scheduled meeting with any governmental agency regarding, in whole or in part, compliance or alleged non-compliance with Environmental Laws or use of or operations at the Land.</p>
	<p>iv. Lessor reserves the right to notify or consult any appropriate governmental authority or agency regarding conditions on the Land or concerns relating to Lessee's operations at or use of the Land, including operations of Lessee's employees, agents, contractors, sublessees, or any other third party under Lessee's control, if</p>

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	<p>Lessor believes those conditions or operations do or may violate applicable Environmental Laws, may pollute or contaminate the environment, or may adversely affect the health, welfare, or safety of persons.</p> <p>j. <b>Response and Compliance Actions.</b></p> <p>i. If the Land or other property is or becomes contaminated or otherwise damaged or injured as a result of a Release of Solid Waste or Hazardous Substances on, at, or from the Land by Lessee or by its employees, agents, contractors, sublessees, or any other party under Lessee's direction and control, Lessee shall (a) orally notify Lessor immediately of such contamination or damage upon Lessee's discovery of such contamination or damage, (b) promptly take reasonable actions to control any such Release or contamination, (c) immediately take all reasonable actions necessary or required under Environmental Laws to mitigate any immediate threat to human health or the environment. Lessee shall then undertake any further repairs or corrective actions, in a timely manner and in full compliance with Environmental Laws, as are necessary to remove or remediate contamination to, at a minimum, return the Land to its prior condition.</p> <p>ii. If Lessee does not take immediate action or other timely action as necessary to mitigate or prevent any imminent actual or potential threat to human health or the environment caused by Lessee or its agents, contractors, sublessees, or any other party under Lessee's direction or control, then Lessor, in addition to its</p>

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	<p>rights and remedies described elsewhere in this Lease, at its election, may enter the Land and take whatever reasonable action to eliminate the threat or return of the Land to at least its prior condition, as applicable. All Costs (as defined below) associated with any action by Lessor in connection with this section shall be subject to the reimbursement and indemnification requirements of this Article.</p> <p>k. <b>Corrective Action Process.</b> Before commencing any remedial or corrective action under this Article, and except for immediate preventative action required hereunder, Lessee shall obtain prior written approval of the Lessor. The work shall be performed at Lessee's expense, and Lessor shall have the right to review and inspect all such work at any time using consultants and representatives of Lessor's choice. Lessee shall remove or remediate the Land to, at a minimum, its prior condition. Lessee shall, at Lessee's sole cost and expense, make all tests, reports, and studies and shall provide all information to any appropriate governmental agency as may be required pursuant to the Environmental Laws pertaining to Lessee's response actions. This obligation includes but is not limited to any requirements for a site characterization, site assessment and remediation plan that may be necessary.</p> <p>In the event Lessor undertakes any action or incurs any costs in the exercise of its rights hereunder, Lessee shall promptly reimburse Lessor in the manner determined by Lessor in its reasonable discretion at the time such reimbursement is sought, for all reasonable and documented costs associated with such response, repairs, corrective action or remediation, including, but not limited to, consultants' fees, contractors' fees,</p>

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	<p>attorneys' fees, penalties, costs of investigation or other costs incurred hereunder by it or its agents.</p> <p>1. <b>Environmental Indemnification.</b> Notwithstanding any other provision in this Lease to the contrary, Lessee agrees to indemnify, defend and hold harmless Lessor from and against any and all claims, demands, penalties, fines, suits, actions, administrative proceedings, settlements reached, government orders, judgments, losses, damages, liabilities, costs, and expenses (including, but not limited to, reasonable attorneys' and consultants' fees, litigation costs, expert witness fees, and expenses of investigation, removal, remediation, or other required plan or response action) to the extent resulting from (a) the breach of an representation or warranty set forth herein by Lessee or any employees, agents, contractors, sublessees, or any other party under Lessee's direction and control, (b) the failure of Lessee to meet its obligations hereunder, (c) the violation of any Environmental Law by Lessee or its agents, contractors, sublessees, or any other party under Lessee's direction and control, and (d) documented loss by Lessor to a third party or governmental entity from any Environmental Impact Claim (as defined below), to the extent resulting from the operations, activities, actions or inaction of Lessee or its employees, agents, contractors, sublessees, or any other party under Lessee's direction and control at or related to the Land.</p> <p>In the event that Lessee fails or refuses to defend Lessor as provided herein, Lessor shall have full right to undertake its own defense and to settle any such claims or lawsuits. In such event, Lessee shall be liable to Lessor, and shall promptly pay any resulting judgment against, or settlement by</p>

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	<p>Lessor, and shall reimburse Lessor for all reasonable attorneys' fees and costs in undertaking such defense or settlements.</p> <p>m. <b>Reimbursement.</b> In the event Lessor undertakes any action, including, but not limited to, response or corrective action, repairs, or remediation, in the exercise of its rights hereunder, Lessee shall reimburse Lessor, upon written notice, for all costs Lessor incurs in association with such action.</p> <p>n. <b>Survival of Environmental Provisions.</b> Unless specifically stated elsewhere herein, the provisions of this Lease concerning environmental matters, including the representations, warranties, covenants and indemnities of Lessor and Lessee, are intended to and shall survive the termination of this Lease.</p> <p>o. <b>Defined Terms.</b> The following defined terms used herein shall have the following meanings:</p> <p>i. <b>Costs</b> means all costs and expenses, including, but not limited to, attorneys' and consultants' fees, litigation costs, expert witness fees, and expenses of investigation, removal, remediation, or other required environmental plan or response or remedial action.</p> <p>ii. <b>Environmental Impact Claim</b> means any claim, suit, judgment, penalty, fine, loss, administrative proceeding, request for information, citation, notice, cost, or expense (including, but not limited to, any costs of investigation, study, cleanup, removal, response, mitigation, remediation, transportation, disposal, restoration, monitoring, consultants' fees, contractors' fees, and attorneys' fees) which arises out of, is related to, alleges, or is based on the presence, handling, treatment, storage, or actual or threatened Release, dispersal,</p>

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	<p>disposal, escape, or migration of any Hazardous Substance or Solid Waste at or from the Land, or any effect on wildlife.</p> <p>iii. <b>Environmental Laws</b> means all federal, state and local laws, court or administrative decisions, statutes, rules, regulations, ordinances, FAA ACs and orders, court orders and decrees, administrative orders and any administrative policies, guidelines or guidance documents now or hereafter in effect relating to the environment, wildlife, public health, occupational safety, industrial hygiene, and Hazardous Substance or Solid Waste (including, without limitation, the disposal, generation, manufacture, presence, processing, production, release, storage, treatment or use thereof at the Land), or the environmental conditions on, under or about the Land, as amended and as in effect from time to time.</p> <p>iv. <b>Hazardous Substances</b> means (i) all chemicals, materials and substances defined as or included in the definition of “hazardous substances,” “hazardous wastes,” “hazardous materials,” “extremely hazardous wastes,” “restricted hazardous wastes,” “toxic substances,” “toxic pollutants,” “contaminants,” “pollutants,” “regulated substances,” or words of similar import, under any applicable Environmental Law and (ii) all other chemicals, materials and substances that are prohibited, limited or regulated by any governmental authority, including, without limitation, asbestos, radioactive materials (including naturally occurring radioactive materials), petroleum, petroleum products, and substances and</p>

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	<p>compounds containing polychlorinated biphenyls.</p> <p>v. <b>Release</b> means any depositing, spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment, or threat of release such that a release may enter the environment.</p> <p>vi. <b>Solid Waste</b> shall have the same meaning as in the Resource Conservation and Recovery Act.</p>

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## APPENDIX C. REFERENCES

There are a multitude of studies, commentary, and articles on oil and gas production and particularly on hydraulic fracturing. The following sources have been consulted in the preparation of this AC and may be useful sources of further information in the analysis and documentation of environmental considerations.

- Department of Energy, Office of Fossil Energy, National Energy Technology Laboratory, Modern Shale Gas Development in the United States: A Primer, April 2009.
- Department of Energy, Secretary of Energy Advisory Board, Shale Gas Production Subcommittee 90-Day Report, August 18, 2011; Second Ninety Day Report, November 18, 2011.  
[http://www.shalegas.energy.gov/resources/111811\\_final\\_report.pdf](http://www.shalegas.energy.gov/resources/111811_final_report.pdf)
- Department of the Interior, Bureau of Land Management, The Gold Book, Surface Operating Standards for Oil and Gas Exploration and Development, Fourth Ed., revised 2007.  
[http://www.blm.gov/wo/st/en/prog/energy/oil\\_and\\_gas/best\\_management\\_practices/gold\\_book.html](http://www.blm.gov/wo/st/en/prog/energy/oil_and_gas/best_management_practices/gold_book.html)
- Environmental Protection Agency, Hydraulic Fracturing Website,  
<http://water.epa.gov/type/groundwater/uic/class2/hydraulicfracturing/index.cfm>.
- Federal Aviation Administration Memorandum, August 24, 2012, *Interim Guidance on Mineral Extraction and Request for Data Update*.  
<http://www.faa.gov/airports/environmental/media/interimMineralExtractionGuidance.pdf>
- The National Petroleum Council, An Oil and Gas Advisory Committee to the Secretary of Energy, Website, [www.npc.org](http://www.npc.org)
- U.S. Energy Information Administration, Website, [www.eia.gov](http://www.eia.gov)
- FracFocus, Chemical Disclosure Registry, Website, [www.fracfocus.org](http://www.fracfocus.org)

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